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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,423	02/01/2002	Peter A. Callais	IR 3660	1753

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EXAMINER
PEZZUTO, HELEN LEE

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 07/07/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/061,423	CALLAIS ET AL.	
	Examiner	Art Unit	
	Helen L. Pezzuto	1713	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-32 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The nomenclature used in claims 4-5 to recite various alkoxyamine is vague and confusing because it is unclear to as where on the alkoxyamine the various claimed species substituents are attached or linked to.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 9-14, 22, 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Senninger et al. (US-428) in view of Kamath (US-230) or Solomon et al. (US-429).

U.S. 6,509,428 to Senninger et al. discloses a radical polymerization process in the presence of at least two stable free nitroxyl radicals. Suitable nitroxyl radicals include the instant radicals having one hydrogen atom on one carbon atom in the α position of one alkyl group attached to the nitroxyl nitrogen as claimed (col. 6, line 8 to col. 8, line 45). US-428 further teaches the inclusion of at least one radical polymerization initiator such as organic peroxides (col. 9, line 32 to col. 10, line 10). Prior art discloses the block polymerization of styrene, (meth)acrylate, (meth)acrylic acid, and vinyl ester derivatives as expressed in the present claims. The instant "proviso of one of the R moieties be substituted with sulfur or phosphorous.." in claim 3 is within the scope of prior art DEPN species as exemplified (col. 13, lines 14-27; working examples). Accordingly, since prior art discloses various nitroxyl radicals and polymerizable monomers within the terms of those instantly claimed, it would have been obvious to one skilled in the art to select any combination of these nitroxyl radical and monomer

species as taught with the reasonable expectation of success. Finally, regarding the resulting polymeric product being suitable to use as coating composition recited in the preamble of claim 1, the examiner is of the position that it is well know and conventional in the polymer art to use acrylic composition as coating composition, as shown in analogous U.S. 4,77,230 and U.S. 4,581,429. Thus, it would have been obvious to use the resulting polymer composition as coating with suitable coating properties for any variety of intended substrates.

5. Claims 1-2, 4-21, 23-26, 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/49027 in view of Kamath (US-230) or Solomon et al. (US-429).

WO-027 discloses alkoxyamines derived from phosphorous nitroxides corresponding to formula (I), and their utility as polymerization initiators any monomer(s) capable of undergoing free radical polymerization (Page 1 line 25 to page 2, line 31). Prior art Z group include those radical as expressed in claim 2. Due to the confusion in nomenclature used in claims 4-5, it is unclear if any of the recited alkoxyamine species is exemplified. However, it is certain that the terms recited in claim 2 with respect to Z radical fall within the scope of prior art

alkoxyamines. Prior art teaches the utility of the alkoxyamines in the polymerization of a variety of ethylenically unsaturated monomers, including, styrene, (meth)acrylate, and (meth)acrylic derivatives (page 3 lines 26-36). A variety of alkoxyamines containing the instant benzylic, ester, cyano and alkyl Z radical are exemplified, along with the polymerization of styrene using the alkoxyamine in Example 1. Similar to discussion above, prior art is silent regarding the utility of the resulting polymer in coating application. The examiner takes the same position as stated in the previous paragraph that it would have been obvious and fully within the purview of one skilled to use the polymer composition as coating with suitable properties tailored to the intended substrates, as taught in analogous US-230 and US-429.

6. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benoit et al. or Robin et al. or Sobek et al. or Lacroix-Desmazes et al. cited herein in view of Kamath (US-230) or Solomon et al. (US-429).

The articles made of record are related to the utility of nitroxyl and their corresponding alkoxyamines as a bicomponent initiator system in the controlled living free radical polymerization of various ethylenically unsaturated

polymers. Prior art nitroxide/alkoxyamine include DEPN, and styryl-DEPN which clearly encompass the instant alkoxyamine/nitroxyl radicals having one hydrogen atom on the carbon atom in the α position of one alkyl group attached to the amino nitrogen, with Z being Z1 as claimed. These articles discussed in detail the kinetic, which governs the living radical polymerization of various acrylate, styrene based polymers/copolymer systems. Specifically, well-defined and favorable molecular weight, polydispersity and other architectural control of the resulting polymer were expressly taught in these references. These molecular properties corresponds to the desirable molecular weight and polydispersity discussed in applicant's specification in producing a coating composition. Although the articles are silent regarding the specific utility of the polymer as coating composition, it is well known and conventional to one skilled in the art to use acrylic polymers as coating material as taught in analogous US-230 and US-429 as discussed in the preceding paragraph. Accordingly, since prior art meet the terms of the present claims, the instant inventions is deemed to be within the sphere of obviousness encompassed by the general disclosure of these articles. Accordingly, it would have

been obvious to select the phosphorous containing nitroxide/alkoxyamine in the living free radical polymerization of selective combination of monomers (i.e. acrylate, styrene, etc. derivatives).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (703) 308-2393. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 892-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Helen L. Pezzuto
Primary Examiner
Art Unit 1713

hlp
June 30, 2003